The system consists of nine integral wing tanks and a two-cell interconnected tank in the cargo compartment, as shown. All wing tanks contain hydraulically driven IFR boost pumps of 600 gallon per minute capacity. The fuselage tank contains smaller electrically-driven pumps only, for transfer of this fuel to other tanks. All tanks feed into a common manifold which carries the fuel to each wing tip pod where the pressure is boosted by two hydraulically-driven 600 gallon per minute pumps arranged in parallel, to provide approximately 50 psi at the drogue coupling. Operation of the reel and drogue equipment is described.

Power for the system is provided by large hydraulic pumps, one on each engine. These pumps supply power to each tank boost pump, to the high pressure line pumps in the wing tip pods, and to the reel drive.

The configuration is such that all of the fuel in the airplane can be used by the engines or can be transferred direct from tanks, except for the fuselage tanks which will always be used to replenish the main tanks.

It is considered important that the fuel feed system to the engines be entirely separated from the transfer system during normal transfer operation so that any pressure surges which may take place in the transfer system will not be transmitted back to the engine. The IFR fuel system accomplishes this separation.

In normal operation the engines are fed from the main tanks, which are continuously replenished from the other tanks. The fuel management for a typical transfer mission will be as follows:

a. Enroute from take-off to the transfer point, operate all engines from their respective main tanks, while replenishing the main tanks first from the fuselage auxiliary tank, followed by the center IFR tank, and then the LH and RH IFR tanks as required.

b. Prior to commencing the in-flight refueling operation, discontinue transfer to main tanks. Transfer to the receiver first from the center and LH and RH IFR tanks until the center tank is exhausted, and then from the wing IFR and auxiliary tanks. Transfer from the main tanks last, if required, retaining sufficient fuel for the return flight.

c. Enroute from the transfer point to the home base, the engines will continue operation from the main tanks, and any fuel remaining in other tanks will be transferred to the mains.

The system is controlled entirely from the systems engineer's station. Instrumentation is provided to indicate the IFR fuel pressure at the reel, the rate of transfer, extension of the hose, and hose tension.